



**(43) International Publication Date**  
**23 September 2004 (23.09.2004)**

**PCT**

**(10) International Publication Number**  
**WO 2004/081603 A3**

- (51) **International Patent Classification<sup>7</sup>:** G01S 13/00, 7/04
- (21) **International Application Number:**  
PCT/NZ2004/000050
- (22) **International Filing Date:** 9 March 2004 (09.03.2004)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
524757 14 March 2003 (14.03.2003) NZ
- (71) **Applicant (for all designated States except US):** NAV-MAN NZ LIMITED [NZ/NZ]; 13-17 Kawana Street, Northcote, 1332 Auckland (NZ).
- (72) **Inventor; and**
- (75) **Inventor/Applicant (for US only):** MICHEL, Marc, Christopher [AU/NZ]; 25 Tainui Road, Devonport, 1333 Auckland (NZ).
- (74) **Agents:** PIPER, James et al.; 5A Pacific Rise, 1006 Auckland (NZ).
- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW

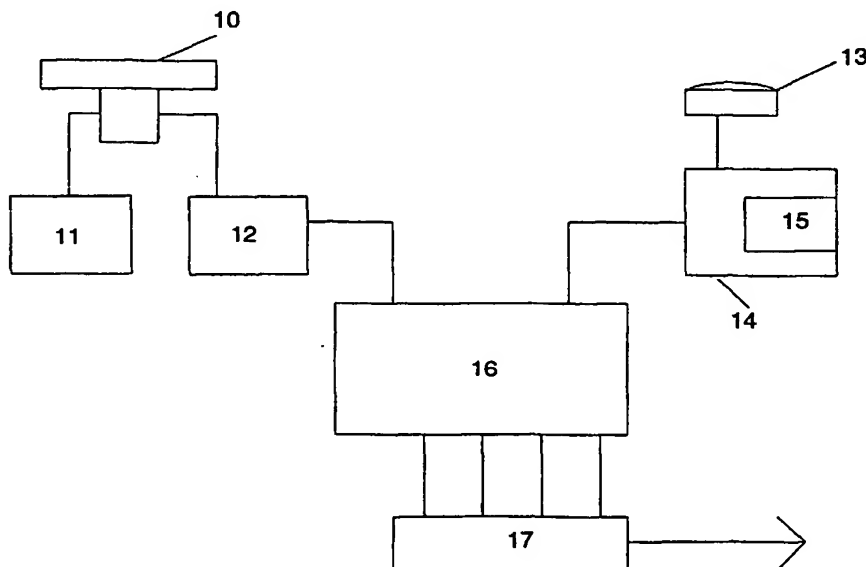
- (84) Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG,*

*[Continued on next page]*

- (54) Title:** RADAR INSTALLATION



- (57) Abstract:** A radar system including a head containing a radar transmitter (11) and receiver (12) which are closely associated with a radar antenna (10). The head also includes a signal processing unit (16) for processing the received radar signals and for combining these with video from other sources, enabling simultaneous video data output (17) in more than one digital format for use by at least one digitally driven display unit.



CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT,  
LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF,  
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,  
TD, TG)

**Published:**

— with international search report

**(88) Date of publication of the international search report:**

4 November 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ2004/000050

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. <sup>7</sup>: G01S 13/00, G01S 7/04

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPAT, INTERNET: radar, head, mast, remote, display, video, data, signal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5923285 A (ANDRUSIAK et al.) 13 July 1999. See column 6, lines 29-59, and Figure 2.	1-20

☐ Further documents are listed in the continuation of Box C☒ See patent family annex

- \* Special categories of cited documents:
- |   |  |
|---|--|
| "A" document defining the general state of the art which is not considered to be of particular relevance  | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  |
| "E" earlier application or patent but published on or after the international filing date   | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone   |
| "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "O" document referring to an oral disclosure, use, exhibition or other means  | "&" document member of the same patent family  |
| "P" document published prior to the international filing date but later than the priority date claimed  |  |

Date of the actual completion of the international search  
15 July 2004

Date of mailing of the international search report 21 JUL 2004

Name and mailing address of the ISA/AU  
AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: pct@ipaustalia.gov.au  
Facsimile No. (02) 6285 3929Authorized officer  
  
Andrea Hadley  
Telephone No : (02) 6283 2222

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ2004/000050

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

See extra sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ2004/000050

**Supplemental Box**

(To be used when the space in any of Boxes I to VIII is not sufficient)

**Continuation of Box No: III:**

Claim 1 defines a radar system including a head containing a radar transmitter and receiver, which is closely associated with a radar antenna. The head also includes a signal processing unit for processing the received radar signals and for combining these with video from other sources to provide a digital video output in more than one digital format for use by at least one digitally driven display unit.

Independent claim 18 defines a method of producing a radar signal for remote display, where at least one video radar signal is received at a radar head. A further video signal representing a map or chart overlay is received at the radar head, which is oriented via another signal. An output is produced consisting of at least two video signals which may be displayed either separately or combined. While this claim defines video signals received at the radar head, it does not define where the actual processing of the video data to produce a digital video output takes place, which appears to be the inventive concept most important to the invention.

Independent claim 19 defines a method of producing a radar signal for a remote display where the digital video output includes raw radar output, processed radar output, a GPS map output and at least one heading signal.

Independent claim 20 defines a method of producing a radar signal for a remote display including a north heading signal.

Since there is no common inventive concept linking the four independent claims, unity of invention is lacking.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

**PCT/NZ2004/000050**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member
US	5923285	NONE
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.		
END OF ANNEX		